REMARKS

Applicant is in receipt of the Office Action mailed February 21, 2007. Claims 1-39 are pending in the application. Reconsideration of the present case is earnestly requested in light of the following remarks.

35 U.S.C. § 112 Rejection:

Claims 1-3, 12-20, 23-24, 27, 30-31, and 35 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for particularly point out and distinctly claim the subject matter which Applicant regards as the invention. More specifically, Examiner argued that the phrase "operable to" constituted a use limitation, thus rendering the claims indefinite as to what structure is embraced by the metes and bounds of the claim language. (See MPEP § 2111.04).

MPEP § 2111.04 states that "claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure." Consequently, Applicant respectfully disagrees with Examiner because the cited claims do recite specific functional limitations of the system. In other words, in the cited claims "operable to" is used to express specific functional limitations of the system or parts of the system that do limit the claim(s) to a particular structure.

For example, in reference to *Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1329, 74 USPQ2d 1481, 1483 (Fed. Cir. 2005), the "operable to" clause in claim 1 clearly states a condition that is material to patentability, and can therefore not be ignored in order to change the substance of the invention. Claim 1 specifically recites that the plurality of digital power management devices are operable to communicate with each other over the control and communication bus to exchange information to coordinate their functions, a clearly claimed and specific limitation that is material to patentability. The same argument applies to the other cited claims in this rejection.

For at least the reasons given above, Applicant respectfully requests removal of the rejection under 35 U.S.C. 112.

35 U.S.C. § 103 Rejection:

Claims 1-39 were rejected under 35 U.S.C. 103(a) as being unpatentable over Chapuis et al. (U.S. Patent No. 7,049,798 B2, herein referred to as "Chapuis1") in view of Chapuis et al. (U.S. Patent No. 7,000,125 B2, herein referred to as "Chapuis2"). With respect to these claims, Applicant respectfully traverses this rejection.

The cited references taken separately or together do not teach or suggest all of the elements of previously presented claim 1.

Claim 1 recites:

> A power delivery management system, the system comprising:
>
> a plurality of digital power management devices, wherein each of the plurality of power management devices comprises a plurality of functions, wherein each of the plurality of power management devices is operable to provide power to one or more point of load devices; and
>
> a control and communication bus, wherein each one of the plurality of digital power management devices is coupled to the control and communication bus;
>
> wherein each respective one of the plurality of digital power management devices includes a controller operable to control the functions of the respective digital power management device; and
>
> wherein the plurality of digital power management devices are operable to communicate with each other over the control and communication bus to exchange information to coordinate their functions.

The cited references taken together or separately do not teach or suggest a system in which a plurality of digital power management devices are operable to communicate with each other over the control and communication bus to exchange information to coordinate their functions.

Examiner argues that Chapuis1 discloses a power delivery management system (20) comprising a plurality of digital power management devices (220, 230, 240 and 250), wherein each of the plurality of power management devices comprises a plurality of functions (configuration data from 210), and wherein the plurality of digital power management devices exchange information over the control and communication bus (via controller 210) to coordinate (synchronize) their functions, and cites column 6, lines 36-52 in support of this argument.

However, Applicant has previously pointed out that interpreting "coordinating functions", (recited in claim 1), to mean "synchronizing devices", (disclosed in column 6, lines 36-52 of Chapuis1), is not supported in either the Present Application or in Chapuis1. Applicant further submits that the concept of device synchronization is well known to those skilled in the art and is clearly distinct from the concept of coordinating functions as recited in claim 1 and also disclosed in the specification of the Present Application. Applicant notes that the Present Application provides examples of the functions and of coordinating the functions, whether for a single POL regulator or for multiple POL regulators.

Examiner also interprets the controller's (210) controlling the POL regulators (disclosed in Chapuis1), to mean that the POL regulators are exchanging information with each other over the control and communication bus. However, Chapuis1 discloses a central controller, which is not recited in claim 1, and Chapuis1 also explicitly teaches throughout that information exchange takes place between the controller and any given one of the POL regulators, not between the POL regulators themselves. Applicant finds no support in Chapuis1 (or Chapuis2) of the concept of POL regulators exchanging information with each other. Rather, Chapuis1 only teaches information being exchanged between any given one of the POL regulators (220, 230, 240 and 250) and the power supply controller (210). In fact, Chapuis1 clearly teaches that it is the controller (210) that monitors the POL regulators in addition to each POL regulator potentially controlling its own functions independently of other POL regulators. This is in contrast to the POL regulators exchanging information to coordinate their functions as recited herein. Therefore, the feature of digital power management devices exchanging information over the control and communication bus to coordinate their functions is

missing from Chapuis1 (and Chapuis2), and is neither taught nor suggested by Chapuis1 (or Chapuis2).

In addition, Examiner admits that Chapuis1 does not explicitly disclose the plurality of digital power management devices are operable to communicate with each other over the control and communication bus. Applicant would also like to point out at this point, that as recited in claim 1, the digital power management devices are operable to communicate with each other over the control and communication bus to exchange information to coordinate their functions. Examiner does not clearly show how information between the POL regulators is exchanged in Chapuis1 absent of the POL regulators communicating with each other, since there is no teaching or suggestion in Chapuis1 of information from one POL regulator being relayed to another POL regulator. Applicant would also like to reiterate that the presence of the controller in the system disclosed by Chapuis1, taken together with the only method of transmitting information taught in figure 5, is indicative of Chapuis1 teaching away from a system configuration in which the POL regulators are enabled and configured to coordinate their functions, since such coordination is performed by the controller in the system of Chapuis1. Chapuis1 is very clear on the specific role of the controller in managing the system from a central location, whether the controller is configured outside or inside a POL regulator, while each POL regulator is merely operable to control its own functions (see column 5, lines 47-58).

As previously argued, this is also underscored by the figures disclosed in Chapuis1. Figure 2 clearly shows a power supply controller (210) coupled to the bus (whether as an individual component or as part of an additional device, e.g. another POL regulator – see column 4, lines 27-30), and the flowchart of figure 7 clearly shows in step 750 that at least a portion of the fault-monitoring data is provided to the power supply controller. Chapuis1 does not teach or suggest or provide a motivation for alternate embodiments that do not include the controller for coordinating and/or controlling the functions of the POL regulators. In other words, Chapuis1 is silent on the concept of the POL regulators exchanging information to coordinate their functions. This distinction is further underscored by the configuration of the components disclosed by Chapuis1, individually and within the system. For example, the POL regulators of Chapuis1 each

include a "control unit" as shown in figures 3-1 and 3-2 (comparable to the "controller" recited in claim 1), while an additional and distinct controller (separate from the "control unit") is responsible for monitoring the POL regulators, hence managing the system.

Information received by the POL regulators from sources other than the controller is explicitly disclosed by Chapuis1 as comprising fault monitoring data, which, as Chapuis1 also clearly indicates, originates from an external device or sense circuit corresponding to the given POL regulator (see figure 3-2, which discloses an example of the configuration of sense circuit 330), with the fault monitoring data containing information on the given POL regulator or its output (see column 5, lines 13-17). It is thus clear from the specification of Chapuis1, including the figures, that Chapuis1 teaches a central controller performing the monitoring of the POL regulators, and any coordination of the functions of the POL regulators (see also column 8, lines 18-33). Summarily, Chapuis1 provides no teaching or motivation for a plurality of digital power management devices that are operable to exchange information to coordinate their functions, and teaches away from such a concept by the inclusion of a central controller used for monitoring the POL regulators.

Examiner then further argues that Chapuis2 teaches a system in which a plurality of power management devices are operable to communicate with each other over the control and communication bus. Examiner cites column 7, lines 21-29 of Chapuis2 in support of this argument. As is evident from the specification of Chapuis2, Chapuis2 discloses distinct multiple buses coupling selected ones of the POL regulators to each other (in contrast to claim 1, which discloses a single control and communication bus), each bus serving a different function. In Figure 3 of Chapuis2, an intra-device interface is provided between individual ones of the POL regulators to control specific interactions, such as current share or paralleling, e.g., current share interface (CS1) provided between POL0 106 and POL1 108, and CS2 provided between POL4 112 and POLn 114 (see column 4, lines 45-49). Chapuis2 also discloses a controller (102) distinct from the POL regulators, which communicates with the POL regulators by writing and/or reading digital data via a serial bus, illustrated in FIG. 3 as the synch/data bus (see column 5, lines 1-5). In addition, Chapuis2 states that one of the functions of the system controller is fault management (one example of "coordinating functions" as disclosed in

the Present Application), which is achieved through the system controller's communicating with the POL regulators over a second bus (OK/fault bus in figure 3) that is distinct from the synch/data bus (see column 5, lines 11-15).

Accordingly, column 7, lines 21-29 merely describe how current sharing is achieved not over the control and communication bus but over a dedicated current share interface which does not couple all the POL devices together, merely pairs of POL devices, and which is distinct from the control and communication (synch/data) bus that does couple all the POL devices together (see FIG. 3). It is clear from these teachings that the intra-device interfaces (CS1 and CS2) are therefore also clearly distinct from both the OK/fault bus and the synch/data bus, and that the current-share interfaces are not meant to be interpreted as comprising a control and communication bus. This is underlined by the fact that Chapuis2 clearly identifies the OK/fault bus and the synch/data bus as control and communication buses, and clearly identifies the current share interface as being specifically configured to allow POL regulators to operate in parallel to produce a single output voltage (see column 4, lines 45-57), not to communicate with each other to exchange information.

In accordance with the configurations described above, Chapuis2 teaches four different modes of operation, and specifically states that when the POL regulators operate as an array, the behavior of each POL regulator, and the array as a whole, are coordinated by a system controller (see column 7, lines 29-31). Furthermore, even in the presence of local control over certain functionality in addition to the central control performed by the controller, the system controller is still responsible for coordinating the functions of the POL regulators (see column 7, lines 40-45). It is therefore clear that Chapuis2 neither teaches, nor suggests a system in which a plurality of digital power management devices are operable to communicate with each other over a control and communication bus to exchange information to coordinate their functions.

For at least these reasons, Applicant submits that the combinations of features recited in claim 1 are not taught or suggested by Chapuis1 and/or Chapuis2, taken separately or together. In other words, whether taken singly or in combination, Chapuis1 and/or Chapuis2 do not teach, suggest or anticipate a system in which a plurality of digital power management devices are operable to communicate with each other over a

control and communication bus to exchange information to coordinate their functions. Applicant also submits that since independent claim 1 has been shown to be patentably distinct, respective dependent claims 2-39 are also patentably distinct for at least the same reasons. Accordingly, Applicant respectfully requests removal of the 35 U.S.C. § 103(a) rejection.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above-referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. The Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to Meyertons, Hood, Kivlin, Kowert & Goetzel P.C., Deposit Account No. 50-1505/5900-00101/JCH.

Also filed herewith are the following items:

☐ Request for Continued Examination

☐ Terminal Disclaimer

☐ Power of Attorney By Assignee and Revocation of Previous Powers

☐ Notice of Change of Address

☐ Other:

Respectfully submitted,

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Date: May 21, 2007 JCH/TAK